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EXAMINER

KIM, CHONG HWA

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/706,661

Filing Date: November 12, 2003

Appellant(s): ALLEN ET AL.

Frank G. McKenzie
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed Apr 20, 2007 appealing from the Office action mailed

Dec 18, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,115,887

Smith

5-1992

5,702,319

Baxter, Jr.

12-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Drawings

The drawings were received on Oct 31, 2006. These drawings are not approved for containing a new matter. The sump 110 having the inlet 113 as newly included in Figure 2A is considered a new matter since the Specification and the Drawings as originally filed fail to show or even suggest that the passage 113 is the inlet for the sump 110 as shown in Fig. 2B.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first lubrication circuit and the second lubrication circuit as recited in claims 1-17 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Specification

The amendment filed Oct 31, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the inlet of the pump 118 being hydraulically connected through passages 111 to **the inlet 113** of sump 110. (emphasis added)

Claim Rejections - 35 USC § 112

Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1-17 recite the limitations, the first lubrication circuit and the second lubrication circuit, wherein the first pump is hydraulically connected to the first sump and the first lubrication circuit and the second pump is hydraulically connected to the second sump and the second lubrication circuit. However, the Specification and the Drawings, as originally filed, fail to show the circuit connections between the sumps and the pumps. Therefore, it is not clear exactly how the circuit connections are made.

Claim Rejections - 35 USC § 103

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, U.S. Patent 5,115,887 in view of Baxter, Jr., U.S. Patent 5,702,319.

Smith shows, in Fig. 1, a lubrication system comprising a transmission mechanism and a transfer mechanism, wherein two sumps 14, 16 are connected to two circuits 56, 20 respectively via two pumps 50, 54, respectively in order to lubricate the transmission and the transfer mechanisms, but fails to show the two pumps being connected to the output drive in the transfer case.

Baxter, Jr. shows, in Fig. 1, a lubrication system comprising two pumps 72 and 50 driven by a common output drive 14 in the transfer case 10.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the pump connection of Smith with the common pump connection as taught by Baxter, Jr. in order to maintain constant lubrication whenever the vehicle is moving with or without the engine running.

(10) Response to Argument

(Note: The Appellant's arguments regarding the Drawings and Specification objections appear to be related to the enablement rejection based on 35 USC 112, 1st paragraph. Therefore, the Examiner considers such arguments to be part of appealable matters rather than petitionable ones before the Technology Center Director. If the BPAI believes the Examiner erred on the decision regarding the appealable vs. petitionable matter, then it is respectfully requested that the BPAI disregard the Appellant's arguments concerning the Drawings and Specification objections.)

1. The appellant argues regarding the drawings that are objected to under 37 CFR 1.83(a) indicating that the Examiner failed to point out specifically where the drawings allegedly fail to support the claims. It is reminded that during the examination of the application, when there is no description as to what is considered a first lubrication circuit and a second lubrication circuit, it is almost impossible to point out exactly where the drawings fail to support the claims. Nevertheless, the specific inadequacy was discussed in the Final Office action made on Dec 18, 2006 in paragraph 8.

The appellant further argues that Figures 2A and 2B show the first lubrication circuit as disclosed on page 9, lines 15-33 and the second lubrication circuit as also disclosed from page 8,

line 35 to page 9, line 13. First, it is not clear how the first lubrication circuit is gleaned from page 9, lines 15-33. In Fig. 2A, there is a disconnect between the sump 112 and the passage 140, the passage 140 and the passage 142, and the passage 142 to the inlet of the lube pump 120 (not to mention where the inlet of the pump 120 is). In Fig. 2B, the first lubrication circuit appears to end at the bearing 172 via the axial passage 168 and the radial passage 170. And after that, it is a mystery where the lubricant flows next. One of ordinary skill in the art may assume that the lubricant sent to the bearing 172 drips down to the reservoir 110. However, there is no description as to how the lubricant in reservoir 110 is forced back to the sump 112. It is well known fact that a transmission and transfer case is a closed system wherein, in theory, at least one lubricant circuit is formed therein to start the flow from a reservoir to various parts and to return to the reservoir to continue the recirculation of the lubricant within the case (see Smith reference). And, it appears that such is not the case for the present invention. There is simply no first lubrication circuit as recited in the claims.

The same argument can be made for the second lubricant circuit. According to the specification from page 8, line 35 to page 9, line 13, it appears that Fig. 2A shows the pump 118 that is, somehow, hydraulically connected to the sump 110 (which is shown in Fig. 2B). And via the output 122, the lubricant is directed to the passage 126 and to the rotating components located in the transmission case 14 as shown on the left side of Fig. 2A. Again, the description stops there and does not further describe how the lubricant sent to the transmission case 14 is returned to the sump 110 as shown in Fig. 2B, not to mention how the lubricant in the sump 110 is pickup by the pump 118. In conclusion, there are no first and/or second lubricant circuits disclosed in the specification. Rather, at most, disconnected fluid paths (not fluid circuits) are

described. Therefore, the drawings fail to show the first lubricant circuit and the second lubricant circuit as recited in the claims.

2. The appellant argues that the Advisory Action made on Jan 29, 2007 refused to enter the amendment that canceled the new matter. It is agreed that the new matter regarding “the inlet 113” has been canceled in the amendment after Final filed Jan 2, 2007. However, the amendment has included other new matter issues as indicated in the Advisory Action. Such new matter issues do not clarify the issues surrounding the first and second circuits, but adds further confusion and contradiction. Therefore, such amendment after Final has not been entered. For instance, before the amendment, the paragraph beginning at page 8, line 35 (specifically on page 9, line 10), “a lubrication circuit” is located in the transmission case which is indicated with “14” on the left side of the transfer case as shown in Fig. 2A. The amendment after Final indicates in the paragraph beginning at page 8, line 35, the output 122 of pump 118 is connected to the second lubrication circuit by passages 124 to the passage 126. And further indicates that the passage 126 is part of the second lubrication circuit. Moreover, the amendment includes that the fluid is drawn from the sump 110 and supplied by pump 118 to “the second lubrication circuit” located in the transmission case. As a result, the amendment after Final appears to suggest that 1) the pump 118 and sump 110 are not part of the circuit; 2) the second lubrication circuit is in the transfer case (see amendment on page 8 line 7); and 3) the lubrication circuit in the transmission case is now the second lubrication circuit. As any one of ordinary skill in the art would realize, without the pump and sump being part of the circuit, it appears that the circuit cannot be realized. And certainly there is no clear demarcation as to which passages are

construed to be part of the circuit. Therefore, such amendment after final makes the disclosure more confusing and contradicting.

3. The appellant argues that an ordinary skill in the art would clearly see from the specification and drawings exactly how the circuit connections are made. As discussed above, neither drawings nor the specification clearly show/describe how the circuit connections are made. It appears that the first and second lubrication circuits are crucial in carrying out the invention. However, because of the lack of full, clear and concise description as required in the first paragraph of 35 USC 112, one of ordinary skill in the art cannot make and use the invention.

4.2 The appellant argues that the Examiner has failed to establish a *prima facie* case of obviousness. The Examiner disagrees with the appellant for the following reasons below.

4.3 The appellant argues that the Smith '887 reference teaches away from having both pumps 50, 54 hydraulically connected to the output of the transfer case. The Examiner agrees with the appellant that the Smith reference fails to show the pumps 50 and 54 both being connected to the output of the transfer case and it was stated so in the 35 USC 103 rejection. However, the system of the Smith reference teaches or suggests that the first and second pumps 50 and 54 are hydraulically connected to and supply fluid to first and second pumps. The first lubrication circuit is interpreted to being the passages 32, 34, 56 with the pump 54 and the sump 16. And the second lubrication circuit is the passages 18, 20, 52 with the pump 50 and the sump 14.

4.4 The appellant argues that it would be inoperable if the Smith reference is modified with the teaching of output drive driving both pumps in Baxter, Jr. It is the Examiner's view that the test for obviousness is not whether the features of a secondary reference may be bodily

incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Furthermore, it would be obvious to a person of ordinary skill in the art to modify other features of the Smith reference so that the intended result can be reasonably maintained without destroying the reference.

(Note: The following responses to the appellant's arguments regarding claims 4-17 are exhaustive element by element analysis. The Examiner has not done an element by element analysis in the previous Office actions because the limitations in claims 4-17 normally exist in the transfer drive mechanism and one of ordinary skill in the art does not require an expertise in the art to interpret which element is which in the reference by Baxter, Jr. Furthermore, the reference by Smith shows in diagrammatically how the circuits are formed in relation to the transmission and the transfer case components. Although Smith does not disclose the detailed mechanisms of the transfer case components, it is a common practice to include the devices as recited in claim 4-17 in transfer cases. Nevertheless, the elements recited in claims 4-17 are so apparent and clearly shown by Baxter, Jr. as discussed below.)

4.5 The appellant argues that neither references teach a lubrication circuit located to any extent in a transmission as recited in claim 4. Claim 4 recites the limitation "wherein the second lubrication circuit is located at least partially in the transmission." It is the Examiner's view that Smith shows, in Fig. 1, the second lubrication circuit having the passages 18 and 20 passing

through the transmission 10 and 60. Therefore it can be construed that the second lubrication circuit is located at least partially in the transmission as recited in claim 4.

4.6 The appellant makes the same argument in 4.5 for claim 6. Claim 6 does not recite the limitation wherein a lubrication circuit is located in a transmission. However, in terms of the what is recited in the independent claim 6, Smith shows in Fig. 1 a system comprising an input (inherent from transmission to the transfer case); a first output driveably connected to the input (inherent in the transfer case); a first sump 14 for containing a source of hydraulic fluid; a first lubrication circuit 20, 34, 60; a lube pump 54 driveably connected to the first output (see col. 3, line 31-32) and hydraulically connected to the first lubrication circuit; and a scavenge pump 50 hydraulically connected to the first sump 14; but fails to show the scavenge pump being driveably connected to the first output. Baxter, Jr. teaches, in Figs. 1 and 3, a system comprising an input 12; a first output 26 and 14 driveably connected to the input; a lube pump 72 driveably connected to the first output; and a scavenge pump 50 driveably connected to the first output 14. The motivation would be same as the motivation as stated above in the rejection.

4.7 The appellant argues that neither references teach a transfer drive mechanism as recited in claim 7. As claim 7 recites, Baxter, Jr. shows, in Fig. 1, a second output 16; and a transfer drive mechanism (such as 42, 47, 44, 46) driveably connected to the first output 14 and the second output 16, at least a portion of the drive mechanism located in relation to the first sump (as suggested in col. 7, lines 40-41) for movement through the fluid source (lubricant).

4.8 The appellant argues that neither references teach the limitations as recited in claim 8. It is the Examiner's position that Baxter, Jr. shows, in Figs. 1 and 3, a second output 16; a clutch 48 having a first set of friction elements 58 driveably connected to first output 14, and a

second set of friction elements (96 –100) adapted driveably to engage and disengage the first set of friction elements, the clutch alternately driveably connecting and disengaging the first output and second output (see col. 6, lines 1-17); and the first lubrication circuit (78, 104, 52, 53) further comprises fluid passages hydraulically connecting the lube pump 72 to the first set of friction elements and the second set of friction elements.

4.9 The appellant argues that neither references teach the limitations as recited in claim 9. Baxter, Jr. shows, in Figs. 1 and 3, a gearset 18 including a sun gear 32, a ring gear 34, a carrier 28, and a set of planet pinions 30 supported for rotation on the carrier, each pinion in meshing engagement with the sun gear and ring gear and journaled on a stub shaft (the shaft that supports the pinion 30 in Fig. 1) supported on the carrier; and the first lubrication circuit 53, 52 further comprises fluid passages hydraulically connecting the lube pump 72 to at least a portion of the components of the gearset (inherent).

4.10 The appellant argues that neither references teach the limitations as recited in claim 10. Baxter, Jr. shows, in Figs. 1 and 3, a bearing supporting the first output 14 on the transfer case (as shown on the right side of Fig. 3); and the first lubrication circuit further comprises fluid passages (52 and the radial passage extending from passage 52 on the right side and below the ball bearing of Fig. 3) hydraulically connecting the lube pump 72 to the bearing.

4.11 The appellant argues that neither references teach the limitations as recited in claim 11. Baxter, Jr. shows, in Fig. 3, a balance dam 102 and the first lubrication circuit comprises fluid passages 104 hydraulically connecting the lube pump to the balance dam.

4.12 The appellant argues that neither references teach the limitations as recited in claim 12. Baxter, Jr. shows, in Figs. 1 and 3, a second output 16; a transfer drive mechanism 38-46

including a first sprocket wheel 38 journalled for rotation on the first output 26, a second sprocket wheel 44 spaced from the first sprocket wheel and secured to the second output, and a drive chain 42 driveably engaged with the first sprocket wheel and the second sprocket wheel and located in relation to the first sump for movement through the fluid source.

4.13 The appellant argues that neither references teach the method as claimed in claim 13. It is the Examiner's view that Smith shows, in Fig. 1, a method for supplying lubrication to a transmission and transfer case, the transmission and transfer case each having a sump (inherent) for containing hydraulic fluid, the transfer case having an output adapted for a drive connection to at least a first set of driven wheels, the method comprising the steps of driveably connecting a first pump 54 to the output; defining a first circuit 32, 34, 56 for carrying lubrication fluid in the transfer case; defining a second circuit 20, 30, 52, 18 for carrying lubrication fluid in the transmission 10; hydraulically connecting the first pump 54 to the transmission sump 60 and to the first circuit; and hydraulically connecting the second pump 50 to the transfer case sump 16 and to the second circuit; but fails to show the step of driveably connecting the second pump to the output. Baxter, Jr. shows the step of driveably connecting both a first pump 72 and a second pump 50 to the output 26 and 14.

4.14 The appellant argues that neither references teach the method as claimed in claim 14. It is the Examiner's view that Baxter, Jr. shows, in Figs. 1 and 3, the step of establishing fluid passages (52 and the radial passage extending from passage 52 on the right side and below the ball bearing of Fig. 3) connecting the first pump 72 and the bearing located in the transfer case for supporting the output 14 on the transfer case.

4.15 The appellant argues that neither references teach the method as claimed in claim 15. Baxter, Jr. shows, in Figs. 1 and 3, the step of establishing fluid passages (78, 104, 52, 53) connecting the first pump 72 and a clutch 48 located in the transfer case for alternately driveably connecting and disconnecting the output 26 and 14 and a second output 16.

4.16 The appellant argues that neither references teach the method as claimed in claim 16. Baxter, Jr. shows, in Fig. 3, the step of establishing fluid passages 104 connecting the first pump 72 and a balance dam 102 located in the transfer case.

4.17 The appellant argues that neither references teach the method as claimed in claim 16. Smith shows, in Fig. 1, the step of establishing fluid passages 52, 18 connecting the second pump 50 and a surface supporting rotating components (inherent) located in the transmission 10.

4.18 The rejections of claims 1-17 should not be reversed because a *prima facie* case of obviousness has been established as discussed above. It has been explained that the combination of Smith and Baxter, Jr. references are not bodily combined but rather Smith is modified with what Baxter, Jr. has taught; that is it would have been obvious to apply the concept of utilizing single output to operate both, first and second, pumps without destroying the intended purpose of Smith. And finally, all of the elements and limitations as recited in the claims are taught or suggested by both references. It has been shown that all of the limitations as recited in the depending claims are commonly known in the art of transmission and transfer case and it does not require an expert to distinguish which element is which in Baxter, Jr. and Smith. The main subject matter of the present invention is that the main pump in one lubrication circuit and the scavenge pump in other lubrication circuit are both operated by the output drive. And it has been shown that one of ordinary skill in the art could modify the lubrication system as shown by

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Smith with the concept as taught by Baxter, Jr. wherein both pumps of Smith can be operated with a single output drive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Chong Kim



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